

BEST AVAILABLE COPY

Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims to the application.

5 Listing of Claims:

1. (currently amended) A pulp carboxylation system comprising
a pulp bleaching stage,
a washer following said pulp bleaching stage,

10 a first mixer following said washer,
a supply of basic material connected to said system whereby said base material will be
mixed by said first mixer,

a second mixer following said first mixer,

a supply of carboxylation chemicals connected to said system after said first mixer

15 whereby said carboxylation chemicals will be mixed by said second mixer,

a ~~first stage~~ reaction chamber following said second mixer, said reaction chamber
being sized for a reaction time of no more than 15 minutes,

a third mixer following said reaction chamber,

a supply of stabilizing material connected to said system after said reaction chamber

20 whereby said stabilizing material will be mixed by said third mixer,

a ~~second stage~~ stabilizing chamber following said ~~second~~ third mixer.

2. (canceled)

3. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 2 minutes.

25 4. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 1 minute.

5. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 30 seconds.

30 6. (original) The carboxylation system of claim 1 in which said reaction
chamber is sized for a reaction time of no more than 15 seconds.

7. (original) The carboxylation system of claim 1 in which said pulp
bleaching stage is an extraction stage.

8. (original) The carboxylation system of claim 7 in which said stabilizing
chamber is a chlorine dioxide bleach tower.

- 9 (original) The carboxylation system of claim 1 in which said pulp bleaching stage is a chlorine dioxide stage.
10. (original) The carboxylation system of claim 9 in which said stabilizing chamber is a chlorine dioxide tower.
- 5 11. (original) The carboxylation system of claim 1 in which said stabilizing chamber is a chlorine dioxide bleach tower.
12. (original) The carboxylation system of claim 1 in which said first mixer is a pump.
13. (original) The carboxylation system of claim 1 further comprising a pH
10 meter at the exit of said reaction chamber.
14. (original) The carboxylation system of claim 1 in which said supply of basic material is selected from the group consisting of sodium hydroxide and sodium carbonate.
15. (original) The carboxylation system of claim 1 in which said supply of
15 basic material is connected to said first mixer.
16. (original) The carboxylation system of claim 1 in which said supply of carboxylation chemicals is a sufficient amount of a primary oxidant selected from the group consisting of hindered heterocyclic oxammonium salts in which the carbon atoms adjacent the oxammonium nitrogen lack .alpha.-hydrogen substitution, the corresponding amines,
20 hydroxylamines, and nitroxides of these oxammonium salts, and mixtures thereof, and a secondary oxidant selected from chlorine dioxide and latent sources of chlorine dioxide in a sufficient amount to induce an increase in carboxyl substitution in the carbohydrate of at least 2 meq/100 g.
17. (original) The carboxylation system of claim 1 in which said supply of
25 stabilization chemicals is connected to said second mixer.
18. (original) The carboxylation system of claim 1 in which said supply of stabilizing materials are selected from the group consisting of an alkali metal chlorite, a peroxide, an acid, chlorine dioxide, a peracid and mixtures thereof.
19. (original) The carboxylation system of claim 1 in which said supply of
30 stabilizing materials is selected from the group consisting of a peroxide, an acid, and mixtures thereof.
20. (original) The carboxylation system of claim 1 in which said stabilizing material is an acid.